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THE PARTNERSHIP VOCATIONAL EDUCATION PROJECT, A NEW PROGRAM IN INDUSTRIAL-TECHNICAL EDUCATION.

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THE PROPOSED PROGRAM TO IMPROVE INDUSTRIAL-TECHNICAL EDUCATION WILL FUNCTION ON THREE LEVELS--UNIVERSITY, COMMUNITY COLLEGE, AND HIGH SCHOOL. IN GRADES 9 AND 10, THE PROGRAM WILL CONSIST OF A STUDY OF AMERICAN INDUSTRY. IN GRADES 11 AND 12, THERE WILL BE A 2-YEAR SEQUENCE OF FOUR MAJOR COURSES IN ENGLISH, SCIENCE, MATHEMATICS, AND INDUSTRIAL-TECHNICAL EDUCATION. THE NATURAL RELATIONSHIPS OF EACH MAJOR SUBJECT TO THE OTHERS WILL BE DRAWN OUT AND USED AS CONSTANT REINFORCEMENT. THE COMMUNITY COLLEGE PROGRAM IS DESIGNED TO GIVE THE STUDENT PROFICIENCY IN HIS SELECTED FIELD OF TECHNOLOGY, AUGMENTED BY MATHEMATICS, BASIC SCIENCES, ENGLISH, AND TECHNOLOGICAL PRINCIPLES OF THE SELECTED FIELD. UNDER THE UNIVERSITY 5-YEAR PLAN, STUDENTS WILL HAVE MUCH MORE INTERNSHIP TEACHING EXPERIENCE THAN STUDENTS IN A TYPICAL INDUSTRIAL-TECHNICAL TEACHER EDUCATION PROGRAM. IN ADDITION, ON-THE-JOB INDUSTRIAL INTERNSHIP EXPERIENCES WILL BE PROVIDED. A CRASH PROGRAM FOR INSERVICE TRAINING OF PRESENT TEACHERS WILL CONSIST OF SEMINARS, COURSES, AND INDUSTRIAL INTERNSHIP WHICH COULD LEAD TO A MASTER'S DEGREE. INCREASED ARTICULATION WITHIN THE SCHOOL HIERARCHY, IMPROVED TEACHING METHODS, COOPERATION WITH INDUSTRY, REDESIGN OF CURRICULUMS, AND THE INCLUSION OF MORE FLEXIBILITY FROM THE STUDENT'S VIEWPOINT ARE FACETS OF THIS NEW APPROACH. (EM)

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THE PARTNERSHIP VOCATIONAL EDUCATION PROJECT

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Central Michigan University
Mount Pleasant, Michigan

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A New Program

in

Industrial-Technical Education

THE

PARTNERSHIP VOCATIONAL EDUCATION PROJECT

PROJECT DESCRIPTION

A Proposal
Presented to and Accepted by

THE FORD FOUNDATION

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INTRODUCTION

This is a description of a new program in Industrial-Technical Education designed to improve the quality of industrial-technical education courses, the quality of instruction, the articulation from one phase of education to another, and the application of knowledge through correlation of industrial-technical subjects with other academic areas.

Called the Partnership Vocational Education Project, the program will function on three levels - university, community college, and high school.

This total effort accentuates a committed cooperative approach involving Central Michigan University, selected partnership schools, community colleges, industries and their related associations, Chambers of Commerce, and labor. These groups are unanimous in their belief that real accomplishments will result only from a cooperative effort.

The design of this new program incorporates the opinions of Central Michigan University administrators and faculty, participating school administrators, and representatives associated with industry.

UNDERLYING ASSUMPTIONS AND CHANGING CONDITIONS

This new program is based upon the following assumptions:

1. That our rapidly expanding technology has created a tremendous need for skilled technicians and specialists trained to work with people and with modern machines as they serve as teachers, supervisors, directors, and consultants in the fields of industry, technology, and education.

2. That the problem of unemployment and the growing national problem of the teen-ager without a job provides a real challenge to our total society and calls for new ways of solving these problems by our educational institutions.

3. That success in a new kind of training for a technological society will require a basic redesign in secondary school, community college, and university curricula which provides appropriate balance and relationship between the industrial-technical curricula and the general education curricula.

4. That a new approach to educating youth and teachers can best be accomplished through a cooperative partnership between the University, community colleges, the secondary schools, and industry.

The new Program also reflects certain beliefs held in common by the Central Michigan University faculty and the participating schools. These are.

1. That frequently there has been a lack of general education and professional experience to complement vocational experience in the preparation of vocational education teachers as well as a lack of industrial experience in the preparation of industrial arts teachers.

2. That vocational teachers often have not been given the opportunity to become familiar or work with the other disciplines.

3. That many school curricula offer few alternatives to college-bound students.

4. That high school schedules frequently have been so inflexible that course offerings have been limited and structured by this fact.

5. That too often school curricula offer little challenge to or stimulation for the under achievers.

6. That there has been a lack of coordination between the high school, the community college, and the university.

7. That students committed to vocational programs frequently get locked in, which, in turn, may result in a lack of general education.

8. That there is wide disparity between what is professed and what is taught in industrial-technical education.

PURPOSES

The basic purpose of this new program is to provide an industrial-technical educational program distinguished by the over-all high quality of the high school and college graduates prepared by it.

Supporting purposes are:

1. To improve the quality of and provide industrial-technical education programs designed specifically for the fulfillment of America's purpose and a changing world of work.

2. To provide occupational and professional guidance adapted to the individual competencies and special needs of students.

3. To engage a significantly higher proportion of capable high school graduates in preparing for careers in teaching or industry.

4. To better train high school graduates for continuing their industrial-technical training in college.

5. To make more effective use in industrial-technical education of modern industrial concepts, methods and work-study internships in industry, and the secondary schools.

6. To provide an orderly transition from the classroom to jobs or continuing development.

7. To develop retraining in-service programs for industrial-technical teachers in the schools.

8. To bring about changes in current secondary, community college, and university curricula necessary to the upgrading of industrial-technical training.

9. To develop a partnership relationship with schools, community colleges, industry, and the University in carrying out a total improvement program.

10. To provide "on-the-job" load-bearing internships.

11. To select and work intensively with a variety of schools in developing pilot demonstration centers.

12. To provide, through the University, continuing guidance to schools interested in designing new and modern programs of industrial-technical education.

SOME BASIC CHARACTERISTICS OF THE PROGRAM

This is a plan for developing new industrial-technical education programs designed to train more and better qualified teachers and better qualified individuals for careers in industry, provide upgraded in-service education for teachers, and improve and enrich curriculum programs of industrial-technical education, both at the secondary and higher education levels. Changes will occur in current secondary, college, and university

programs compatible with our 20th century technological society.

Better industrial-technical education programs will result because this project will involve a closer, cooperative relationship between the secondary schools, industry, and the University. Individuals preparing for teaching industrial-technical education and for industrial careers will be better selected because the project program will begin with recruitment and counseling in the high schools. They will be better educated because the program will provide a more flexible, individualized course of study. They will be better prepared to adjust to changing demands because the program will provide additional and more suitable on-the-job experiences and contact with up-to-date programs.

To ease the transition from classroom to on-the-job performance, the project will provide more field work and field trips, more work-study experience, and more contact with practicing professionals.

Leadership will be provided to selected partnership schools to help them plan and initiate changes in the curricula of their secondary schools to better meet the challenges of our times and needs of our youth.

Industrial-technical education will be a joint responsibility of the secondary schools, industry, and the University. A cooperative approach will provide, not more of the same, but rather a different kind of practical experience-training, including more training under "battle conditions."

The new program will emphasize educating for the present and future beginning with the secondary schools and continuing through the community college and the University. Functioning at all three levels, university, community college, and high school, special emphasis will be on an interdisciplinary approach inter-relating industrial-technical education with other academic areas, namely, in the fields of English, physical science, and mathematics.

Partnership high schools will be concerned with curriculum development programs in industrial-technical education structured to provide for teaching the concepts that will more realistically lead to a fuller comprehension of present-day technology and meet the job preparation or college specialization needs of our youth.

The new industrial-technical education programs will provide experiences involving content not taught in other curriculum areas of the high school---involving an insight into and an understanding of the tools, machines, and industrial processes basic to our technical society. In addition, they will provide for the discovery and development of technical abilities possessed by students. The academic curriculum of the high schools will be adjusted where needed to better supplement and strengthen the total educational experience of the student.

The high school program will adequately provide for the basic instructional needs of 1.) those students who may or may not enter the labor force after graduation; 2.) those students planning to pursue advanced study and careers in an area of technology or applied science; and 3.) the reluctant or slow learner, the culturally deprived, and/or the prospective drop-out, who will be entering the labor force before graduation or immediately after.

The project will provide in-service education for the upgrading of secondary school teachers as well as supervisory and consultative services to partnership schools.

The community college program will be aimed at providing maximum technological training augmented by an interdisciplinary approach. Transfer to the University will be open if the student wishes to earn the bachelor's degree.

An updated University curriculum in industrial-technical education will provide a five-year program leading to a bachelor's degree and a teaching certificate for teachers of industrial-technical education. Emphasis will be on additional teaching and on-the-job

industrial experience and on an inter-departmental academic sequence.

The plan will provide students with a broad, general education background, plus training in communication skills, human relations, research, and practical on-the-job experience in the secondary schools and in industry. The "on-the-job" experiences will be load-bearing, paid internships in the schools and in industry. Key features of the plan will include individually planned courses of study and an improved and better balanced curriculum.

Guidance will be emphasized in the high school, the community college, and the University. The counselor will help the high school or college student plan a program suited to his strengths, weaknesses, and needs. Course requirements will be designed to reach this goal.

CHARACTERISTICS OF THE HIGH SCHOOL PLAN

The high school plan is designed to offer students basic industrial-technical training leading to a fuller comprehension of present-day technology and employment procedures as well as stimulating them to continue their education in the high school, community college, technical institute, or in a four-year college.

The program is intended to appeal to all boys regardless of abilities and talents. Effort will be made to allow for differences in abilities, interests, and needs, as well as afford learning experiences which are most significant for the success of each individual. For some, successful achievement because of the vocational interest of the student may be the motivating force for continuing in school.

The industrial-technical courses will have their content cast in science, mathematics, and English. The natural relationship of each subject to the others will be drawn out and used for augmenting knowledge and for the constant reinforcement of the relationship between the

vocational and the academic subjects. Therefore, inter-relationships between subjects is an integral feature of the program. The program will foster experiments, research, exercises, and opportunities for solving various types of technical problems.

Teaching teams, television, radio, electronic tape, excursions, self-teaching, teaching machines, and internships will be all-important and special features of the program.

In the ninth or tenth grade, the program will consist of "The Study of American Industry." At these grade levels it is hoped all boys in school will see and experience the unity or wholeness of modern industry. Opportunities to study the underlying functions of industry and explore their inter-relations will be provided. No attempt to group students by ability levels will be made in these grades.

During the eleventh and twelfth grades the program will consist of a two-year sequence of four major courses in the subject areas of English, science, mathematics, and industrial-technical education. Students will take courses in these subject areas as a group, but will mix with the rest of the pupils for other courses normally given in these grades.

The natural relationship of each major subject to the others will be drawn out and used for constant reinforcement. The inter-relationships between the subjects will be taught as an addition to the objectives of the courses themselves. Team teaching will be an integral feature of the program. Teachers from the four major subject areas will function as a planning team to organize the content and evaluate the students' work.

In order to accommodate ability differences among students, a three-level program will be followed when deemed desirable. The advanced level will accommodate the college-bound upper ability group. Graduates from this group will provide recruits into teaching and for advanced study and careers in an area of technology or applied science. This could occur either through immediate enrollment in the University or by community college transfer.

The intermediate level will accommodate those middle ability students who may qualify to enter the labor force after graduation or qualify to enter the community college or the University.

The lower level will accommodate the lower ability group of students who are not necessarily college caliber and who will enter the labor force before or after graduation.

No student will be permanently locked into any of the three-level programs if a shift to another program better meets his needs. The program at each level uses the vocational interest of the student as a motivating force in leading to a sound educational program, but the vocational interest does not result in an educational dead-end.

CHARACTERISTICS OF THE COMMUNITY COLLEGE PROGRAM

In the partnership community colleges and/or technical institutes, the training program is designed to give the student proficiency in his selected field of technology, augmented by mathematics, basic sciences, English, and technological principles relative to his selected field. Upon graduation the student should be able to communicate mathematically, scientifically, and linguistically. In order to provide proficiency in these areas and more meaningful experiences to the student, an inter-discipline approach will be used. The major disciplines involved will include the areas of English, science, mathematics, and technical education. As in the pilot partnership high schools, the natural relationships of each subject to the others will be drawn out and used for constant reinforcement. The inter-relationships between the subjects will be taught as an addition to the objectives of the courses themselves. The remainder of the student's program of work will be given over to meeting graduation requirements.

While many of the students in the participating community colleges and/or technical

institutes will probably seek the two-year Associate Degree, transfer to the University will be open to them if the student wishes to earn the bachelor's degree.

CHARACTERISTICS OF THE UNIVERSITY FIVE-YEAR PLAN

Under the University Five-Year Plan, students will have considerably more internship teaching experience than will the students in typical industrial-technical teacher education programs. In addition, on-the-job industrial internship experiences will be provided.

The first two years will be spent on campus in a program especially suited to the needs of each student and the challenge of our times. The remaining three years will consist of alternating semesters of on-campus and off-campus on-the-job paid internships.

The major part of the University program during the student's freshman year will be made up of a two-semester inter-departmental sequence. This major inter-departmental sequence will include the subject areas of English, physics and chemistry, mathematics, and industrial-technical education. Students will take these subjects as a group, but will mix with other college students for additional courses taken during each of these semesters. The natural relationship of each major subject to the others will be drawn out and used for constant reinforcement. The inter-relationships between the subjects will be taught as an addition to the objectives of the courses themselves. Instructors from the four major subject areas will function as a team to organize the content and evaluate the students' work.

The second year will be devoted primarily to general and specialized education. In the alternate semesters, during the remaining years on campus, general and special education will continue to constitute a large proportion of the student's program. Courses in professional education will also be completed during these semesters.

During the student's last semester in college, he will be enrolled in an independent study

dealing with "The Study of American Industry." A team of University professors from the curriculum areas of sociology, economics, commerce, and industrial education will serve as advisers and will help plan and evaluate the student's research. The study will include structure involving the underlying functions of industry and their inter-relationships, the unity or wholeness of modern industry, and a completed product.

In each of the three off-campus semesters, the student will both learn and earn as a full-time intern of a selected partnership school or industry. The student will intern for two semesters in a selected school and one semester in a partnership industry. His first experience will be that of a teacher assistant in a public school, the second in a partnership industry as a learner and employee. The last will be as a teacher associate under close University supervision in one of the partnership schools.

In addition to the three semester internships, the student will have one ten-week summer full-time internship both as a learner and employee in a partnership industry.

CHARACTERISTICS OF THE IN-SERVICE CRASH PROGRAM

Under the new program, extensive in-service education will be provided. Teachers of industrial-technical education will participate in seminars and take other appropriate University courses especially suited to the teachers' needs and for the upgrading of each participant. These seminars and courses will be taught by selected faculty members of Central Michigan University in regional centers or on campus in late afternoon, in the evening, on Saturday, or during the summer session. In some cases, where desirable, individuals from industry will be used to supplement instruction.

Another important feature of the Crash Program provides for an industrial internship where the participating teacher will both learn and earn as a full-time paid employee in a

selected partnership industry. The participant will be placed in a goods-producing or service industry related to his teaching area of specialization.

Participants of the Crash Program may earn credit toward a master's degree. The amount of credit will depend on the quantity and quality of the work completed.

EVALUATION

Evaluation procedures will be pointed toward measuring the effectiveness of this new program in meeting the present-day preparation needs of teachers and labor market trainees. The evaluation plan will be kept flexible in order to make it pertinent and applicable to the action demonstration concept on which this project is based.

IN SUMMARY

Believing that the educated citizen is an integral part of our rapidly expanding technical society, the Partnership Vocational Education Project takes as its major objectives the organization, fostering, and support of a program of education that will encourage and enable all boys to attain an education commensurate with their abilities, aptitudes, and interests.

This Project will establish the following:

1. Improved articulation between secondary schools, community colleges, technical institutes, and the University.

2. An all-university approach to industrial-technical teacher education.

3. Cooperative partnerships between the school, industry, and the University in educating our youth.

4. Greater application of team planning and team teaching.

5. The team idea application with reference to independent study.

6. The concept of more meaningful application to learning among all school disciplines.

7. An extension and a broadening of the base to the concept of "learning by doing."

8. An extension and a broadening of the base to the concept of "earning while learning."

9. A basic redesign for the secondary school, community college, and university curricula which provides appropriate balance and relationship between the industrial-technical curricula and the general curricula.

10. Programs that will accommodate various curriculum patterns in the secondary schools.

11. More effective use in industrial-technical education of modern industrial concepts, methods, and work-study experiences in industry and the secondary schools.

12. A more orderly transition from the classroom to jobs or continuing development.

13. Closer relationships between industrial-technical teachers and those from other disciplines.

14. An upgrading of industrial-technical teachers.

15. A sharing of the uniqueness of the immediate application of theory and practice as now used in industrial-technical classes with the English, science, and mathematics classes.

16. A sound secondary education for the vocational student, one where the vocational interest does not lead to an educational dead-end.

17. School curricula with more alternatives for the college-bound student.

18. A significantly higher proportion of capable high school graduates preparing for careers in teaching or industry.

19. Improved industrial-technical education programs to better meet today's needs.

20. Occupational and professional guidance adapted to the individual competencies and special needs of students.

21. Guidelines for planning new building facilities and for equipping the industrial-technical laboratory.